

Amendments to the Claims

1. (Currently Amended) A multi-domain liquid crystal display device comprising:  
first and second substrates facing each other;  
a liquid crystal layer between said first and second substrates;  
a plurality of gate bus lines arranged in a first direction on said first substrate and a plurality of data bus lines arranged in a second direction on said first substrate to define a pixel region;  
an electric field inducing window in said pixel region; and  
a photo-alignment layer having a pre-tilt angle on at least one of the first and second substrates,

wherein [the multi-domain effect is obtained by dividing the pixel region into areas having one of shape of "+", "x", double "y", "↓", and the teeth of a comb] the electric field inducing window divides the pixel region into a first region and a second region, and

wherein the alignment direction of the liquid crystal layer in the first region is different from that of the liquid crystal layer in the second region during an operation of the pixel, and  
wherein at least one of the alignment directions is determined by the photo-alignment layer irradiated by a light.

2. (Original) The device according to claim 1, wherein the photo-alignment layer includes a material selected from the group consisting of PVCN (polyvinylcinnamate), PSCN (polysiloxane- cinnamate) and CelCN (cellulosecinnamate) based compounds.

3. (Original) The device according to claim 1, wherein the photo-alignment layer has an alignment direction.

4. (Currently Amended) The device according to claim 1, wherein the pre-tilt angle is in a range of 1°~ 5°.

5. (Original) The device according to claim 1, further comprising a thin film transistor at an intersection of one of said gate and data bus lines.

6. (Original) The device according to claim 5, the thin film transistor is an L-shaped thin film transistor.

7. (Original) The device according to claim 1, further comprising a gate insulator, a passivation layer and a pixel electrode on the first substrate.
8. (Original) The device according to claim 7, wherein the gate insulator is patterned.
9. (Original) The device according to claim 7, wherein the passivation layer is patterned.
10. (Original) The device according to claim 7, wherein the pixel electrode is patterned.
11. (Original) The device according to claim 7, wherein the gate insulator includes a material selected from the group consisting of SiNx, SiOx, BCB, acrylic resin and polyimide based compounds.
12. (Original) The device according to claim 7, wherein the passivation layer includes a material selected from the group consisting of SiNx, SiOx, BCB, acrylic resin and polyimide based compound.
13. (Original) The device according to claim 7, wherein the pixel electrode includes ITO (indium tin oxide).
14. (Original) The device according to claim 1, wherein the pixel region is divided into at least two regions such that liquid crystal molecules of the liquid crystal layer have mutually different driving-properties in each region.
15. (Original) The device according to claim 1, wherein the photo-alignment layer is divided into at least two regions so that liquid crystal molecules of the liquid crystal layer have mutually different alignment directions in each region.
16. (Original) The device according to claim 15, wherein at least one region of the photo-alignment layer includes an alignment treatment.
17. (Original) The device according to claim 15, wherein all regions of the photo-alignment layer include a non-alignment treatment.
18. (Original) The device according to claim 15, wherein at least one region of the photo-

alignment layer includes a photo-alignment treatment.

19. (Original) The device according to claim 18, wherein the photo-alignment layer includes a material selected from the group consisting of PVCN (polyvinylcinnamate), PSCN (polysiloxane-cinnamate) and CelCN (cellulosecinnamate) based compounds.

20. (Original) The device according to claim 18, wherein the photo-alignment treatment includes ultraviolet rays.

21. (Original) The device according to claim 18, wherein the photo -alignment treatment includes at least once irradiation.

22. (Original) The device according to claim 18, wherein the photo-alignment layer includes the pre-tilt and an alignment direction by the photo-alignment direction.

23. (Original) The device according to claim 1, wherein the liquid crystal layer has a positive dielectric anisotropy.

9, 24. (Original) The device according to claim 1, wherein the liquid crystal layer has a negative dielectric anisotropy.

25. (Original) The device according to claim 1, wherein the liquid crystal layer includes chiral dopants.

26. (Original) The device according to claim 1, wherein the liquid crystal layer is aligned vertically with respect to top surfaces of the first and second substrates.

27. (Original) The device according to claim 1, further comprising a negative uniaxial film on at least one substrate.

28. (Previously Amended) The device according to claim 1, further comprising a negative biaxial film on at least one substrate.

29. (Currently Amended) A multi-domain liquid crystal display device, comprising:

first and second substrates facing each other;

a liquid crystal layer between said first and second substrates;  
a plurality of gate bus lines arranged in a first direction on said first substrate and a plurality of data bus lines arranged in a second direction on said first substrate to define a pixel region;  
a pixel electrode on said first substrate;  
an electric field inducing window in said pixel electrode; and  
a photo-alignment layer having a pretilt angle on at least one of the first and second substrates,

wherein [the multi-domain effect is obtained by dividing the pixel region into areas having one of shape of “+”, “x”, double “y”, “↓”, and the teeth of a comb] the electric field inducing window divides the pixel region into a first region and a second region, and

wherein the alignment direction of the liquid crystal layer in the first region is different from that of the liquid crystal layer in the second region during an operation of the pixel, and

wherein at least one of the alignment directions is determined by the photo-alignment layer irradiated by a light.

6, 30. (Previously added) The device according to claim 29, wherein the photo-alignment layer includes a material selected from the group consisting of PVCN (polyvinylcinnamate), PSCN (polysiloxane-cinnamate) and CelCN (cellulosecinnamate) based compounds.

31. (Previously added) The device according to claim 29, wherein the photo-alignment layer includes an alignment direction.

32. (Currently Amended) The device according to claim 29, wherein the pretilt angle is in a range of 1° ~ 5°.

33. (Previously added) The device according to claim 29, further comprising a thin film transistor at an intersection of one of said gate and data bus lines.

34. (Previously added) The device according to claim 33, wherein the thin film transistor is an L-shaped thin film transistor.

35. (Previously added) The device according to claim 29, further comprising a gate insulator, a passivation layer and a pixel electrode on the first substrate.

36. (Previously added) The device according to claim 35, wherein the gate insulator is patterned.

37. (Previously added) The device according to claim 35, wherein the passivation layer is patterned.

38. (Previously added) The device according to claim 35, wherein the pixel electrode is patterned.

39. (Previously added) The device according to claim 35, wherein the gate insulator includes a material selected from the group consisting of SiNx, SiOx, BCB, acrylic resin and polyimide based compounds.

b, 40. (Previously added) The device according to claim 35, wherein the passivation layer includes a material selected from the group consisting of SiNx, SiOx, BCB, acrylic resin and polyimide based compounds.

41. (Previously added) The device according to claim 35, wherein the pixel electrode includes ITO (indium tin oxide).

42. (Previously added) The device according to claim 29, wherein the pixel region is divided into at least two regions such that liquid crystal molecules of the liquid crystal layer have mutually different driving-properties in each region.

43. (Previously added) The device according to claim 29, wherein the photo-alignment layer is divided into at least two regions so that liquid crystal molecules of the liquid crystal layer have mutually different alignment direction in each region.

44. (Previously added) The device according to claim 43, wherein at least one region of the photo-alignment layer includes an alignment treatment.

45. (Previously added) The device according to claim 43, wherein the all regions of the photo-alignment layer include a non-alignment treatment.

46. (Previously added) The device according to claim 43, wherein at least one region of the photo-alignment layer includes a photo-alignment treatment.

47. (Previously added) The device according to claim 46, wherein the photo-alignment layer includes a material selected from the group consisting of PVCN (polyvinylcinnamate), PSCN (polysiloxane-cinnamate) and CelCN (cellulosecinnamate) based compounds.

48. (Previously added) The device according to claim 46, wherein the photo-alignment treatment includes ultraviolet rays.

49. (Previously added) The device according to claim 46, wherein the photo-alignment treatment includes at least once irradiation.

50. (Previously added) The device according to claim 46, wherein the photo-alignment layer includes the pretilt angle and an alignment direction by the photo-alignment direction.

51. (Previously added) The device according to claim 29, wherein the liquid crystal layer has a positive dielectric anisotropy.

52. (Previously added) The device according to claim 29, wherein the liquid crystal layer has a negative dielectric anisotropy.

53. (Previously added) The device according to claim 29, wherein the liquid crystal layer includes chiral dopants.

54. (Previously added) The device according to claim 29, wherein the liquid crystal layer is aligned vertically with respect to top surfaces of the first and second substrates.

55. (Previously added) The device according to claim 29, further comprising a negative uniaxial on at least one substrate.

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Cont 56. (Previously added) The device according to claim 29, further comprising a negative biaxial film on at least one substrate.

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02 -- 57. (New) The device according to claim 1, wherein the first substrate does not require an electrode controlling the alignment directions. --

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